

Unique and Universal - The ULTRAHEAT 2WR5 Heat Meter



The ULTRAHEAT 2WR5 - Reliability you can count on

[Economic to run

Long life, minimum failure rate, measurement stability and dynamics – all these features make this heat meter so economic to run. And accurate quantity measurement even for the lowest consumption brings additional revenue to our customers. The low pressure loss reduces the pump power. That means lower power consumption and fewer pumps.

[A protected investment – way into the future

The communication modules make system integration possible: All modules can be added subsequently without a negative reaction and during operation. Functions like tariffs or the “low-energy house” permit future billing variants of the energy consumption.

[Quality you can rely on

Like its predecessors, the ULTRAHEAT 2WR5 measures absolutely accurately and stably for many years. This has been proven by numerous tests on random samples in various countries and in tests by independent bodies. Its wear-free method of operation and use of robust materials ensure a long life. And the new ULTRAHEAT 2WR5 is the only heat meter in the world whose volume measuring unit is made of pure metal even for small flow quantities ($q_p = 0.6$ to 2.5). Plastic parts have been eliminated.





[Constant in measurement

The high resistance during measurement permits recalibration on a statistical basis and new service lives (> 15 years) – lowering the costs for heat measurement considerably. We supply the ULTRAHEAT 2WR5 for all common nominal flow rates from 0.6 to 60 m³/h and the associated mounting lengths.

[Europe-wide approval

The ULTRAHEAT has Europe-wide approval and complies with the stringent EN requirements 1434 Class 2. It therefore makes a contribution to confidence in heat billing and avoids the expense of dealing with meter failures.

[Easy to operate

Whatever the volumes to be measured – the electronics and the measurement principle and therefore operation are always the same. That makes for more reliable handling. It is also possible to read out data or make settings easily via a hand-held terminal or PC. The optical interface is used for that purpose. The ULTRAHEAT also features self-monitoring. It provides early warning if the heating water is contaminated. Standard mounting lengths and flow rates also permit simple replacement of old units.



Equipped for the future -

The ULTRAHEAT 2WR5 heat meter

The 2WR5 is reliable, economic, convenient. And it is future-proof: The ULTRAHEAT[®] 2WR5 heat meter from Landis+Gyr offers all the properties of a modern unit for metering the heat consumption. Because it measures the flow using wear-free ultrasonic technology and without moving parts. A patented procedure for ultrasonic signal routing makes the ULTRAHEAT one of the most accurate meters available today. And it makes it independent of the flow profile, the mounting conditions, and the water temperature.



Applications and functions - The multitalented ULTRAHEAT 2WR5

The ULTRAHEAT can be used for many applications. It is the ideal heat meter for transfer stations in district heating networks, for large heating systems in apartment blocks and housing estates, for low-energy houses, but also for cooling plants 6°/12° with water. It not only functions as a classic heat or cold meter but also as a combined heat and cold meter, as a condensate meter, or, if necessary, as an energy evaluating warm water meter (Geyser meter), or as a pure flow sensor. An overload up to twice the nominal range even over the entire life of the unit is no problem for the ULTRAHEAT.

[Functions for a full overview

The heat meter measures the flow and return temperature and the flow of the heating water with measurement dynamics of 1:100 in flow measurement. It registers both the current values for power, flow rate, and temperature and their maximum values over a set measurement period.

On a preprogrammed date, the ULTRAHEAT 2WR5 reads itself and stores the value which can be read off the display. Tariff registers permit variable billing methods. Tariffs can depend on the flow rate, the power, the temperature difference, or the return temperature. As an alternative, the supplied or returned quantity of thermal energy can be metered. The ULTRAHEAT continually stores 36 monthly values for thermal energy, volume, maximum power, maximum flow rate of the tariff register, and error days.



[Displays and settings on the calculator

The displays are subdivided into a customer area and a service area with different display loops. It is possible to select the dividing line between the two areas and to have the content and sequence programmed before delivery.

[Modular power supply

The heat meter can be powered with 230 V and 110 V line voltage, 24 V direct or alternating voltage, or with a battery (with a life of 6, 9, or 11 years). The battery is changed without tools.



Mounting - made easy

The heat meter can be mounted both vertically and horizontally – filters or straight inlet and outlet sections are not required. The straight measuring tube keeps the pressure loss low and prevents the accumulation of air and dirt.

The electronic unit can be mounted on the tube itself or separately on a wall.

[Flow range

The mounting lengths correspond to the standard dimensions of vane-type meters – simple replacement is ensured. In addition to the permanent temperature of 130 °C, an overtemperature of 150 °C is permissible for up to 2000 hours. Commissioning work, failures, and fast heating are therefore no problem.

[Low pressure loss

The pressure loss on the ULTRAHEAT 2WR5 is much lower than in conventional vane-type meters and is way below 200 mbar.

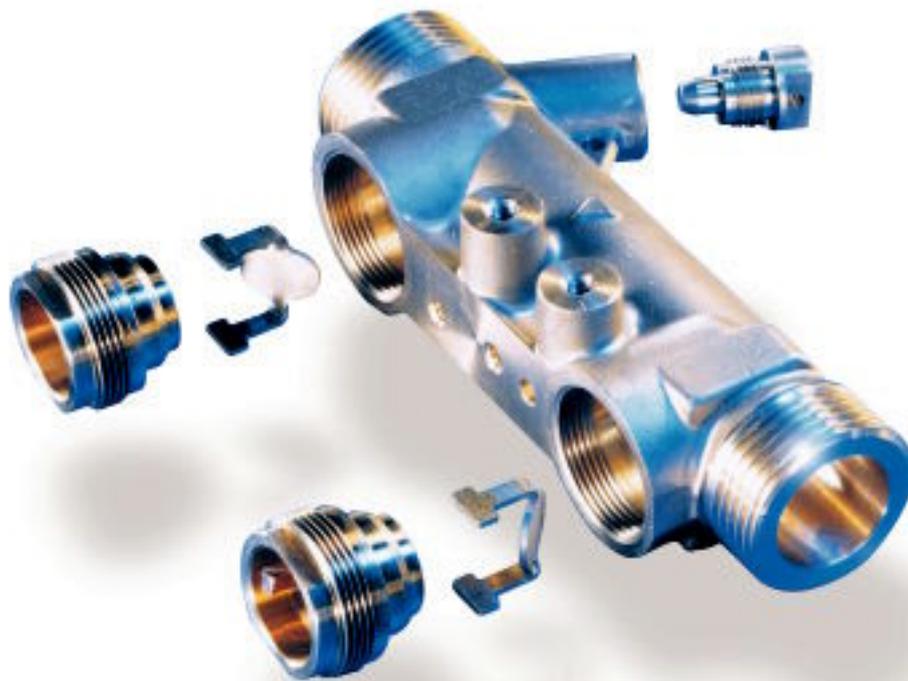
ULTRAHEAT 2WR5 Technical data

[Valid for Germany only:

Following a decision by the PTB (German Federal Institute of Physics and Metrology), the values for the minimum flow q_i will change to twice the value stated in our documentation for q_p 0.6 m³/h to 2.5 m³/h.

Threaded connection					
ULTRAHEAT 2WR5	2WR505	2WR506	2WR515	2WR516	2WR521
Nominal flow rate q_p	0.6	0.6	1.0	1.0	1.5
Maximum flow rate q_s	1.2	1.2	2.0	2.0	3.0
Minimum flow rate q_i	0.006	0.006	0.01	0.01	0.015
Response limit approx.	0.006	1.2	2.0	2.0	3.0
Mounting length	110	110	110	110	110
Thread	G ³ / ₄ B				
Nominal pressure	PN16	PN25	PN16	PN25	PN16
Pressure drop Δp at q_p	140	140	60	60	130

Flanged connection			
ULTRAHEAT 2WR5	2WR508	2WR518	2WR524
Nominal flow rate q_p	0.6	1.0	1.5
Maximum flow rate q_s	1.2	2.0	3.0
Minimum flow rate q_i	0.006	0.01	0.015
Response limit approx.	1.2	2.0	3.0
Mounting length	190	190	190
Thread	DN20	DN20	DN20
Nominal pressure	PN25	PN25	PN25
Pressure drop Δp at q_p	55	140	130



2WR522	2WR507	2WR509	2WR517	2WR519	2WR523	2WR525	2WR536*	2WR537*	2WR538	2WR540	2WR545	2WR547	2WR550	2WR550	
1.5	0.6	0.6	1.0	1.0	1.5	1.5	2.5	2.5	2.5	2.5	3.5	3.5	6.0	10	m ³ /h
3.0	1.2	1.2	2.0	2.0	3.0	3.0	5.0	5.0	5.0	5.0	7.0	7.0	12	20	m ³ /h
0.015	0.006	0.006	0.01	0.01	0.015	0.015	0.025	0.025	0.025	0.025	0.035	0.035	0.06	0.1	m ³ /h
3.0	1.2	1.2	2.0	2.0	3.0	3.0	5.0	5.0	5.0	5.0	7.0	7.0	12	20	l/h
110	190	190	190	190	190	190	130	130	190	190	260	260	260	300	mm
G ³ / ₄ B	G1B	G1B	G1B	G1B	G1 ¹ / ₄ B	G1 ¹ / ₄ B	G1 ¹ / ₄ B	G2B	-						
PN25	PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN16	bar
130	55	55	140	140	130	130	190**	190**	140	140	65	65	190	120	mbar

* in preparation **preliminary

2WR539	2WR546	2WR552	2WR561	2WR565	2WR570	2WR574	2WR582	2WR583	
2.5	3.5	6.0	10	15	25	40	60	60	m ³ /h
5.0	7.0	12	20	30	50	80	120	120	m ³ /h
0.025	0.035	0.06	0.1	0.15	0.25	0.4	0.6	0.6	m ³ /h
5.0	7.0	12	20	30	50	80	120	120	l/h
190	260	260	300	270	300	300	360	360	mm
DN20	DN25	DN25	DN40	DN50	DN65	DN80	DN100	DN100	-
PN25	PN16	PN25	bar						
140	65	190	120	120	70	120	140	140	mbar

Communication - A standard feature

[Integrated service unit

The 2WR5 features an integrated service unit – no additional equipment is required. The extensive self-diagnostics facilitates rectification of any problems with the unit or system.

[Communication is standard

The standard meter is already equipped with an optical interface for communication and can be read or programmed via a PC or hand-held terminal. As an option it is possible to expand the unit with reaction-free modules. The 2WR5 automatically detects which module is plugged in. Adaptations in parameterization are therefore not required.

[20-mA module (current loop):

This module allows you to read the heat meter with a hand-held terminal or a PC via a cable up to 100 m in length (front gate reading).

[M-bus module

Up to 250 heat meters can be connected in a network via a 2-wire cable using this module and read from a central location.

[Pulse module

This module contains either two pulse outputs that are electrically isolated from the heat meter – one for energy and the other for volume –, or status information, e.g. to control rolling mills, or one fast pulse output, e.g. to control closed-loop controllers. With the higher pulse rates, a distinction is made between types of pulses (linear/scaled), pulse duration, and the quantity transferred.

[Combi module M-bus and pulses

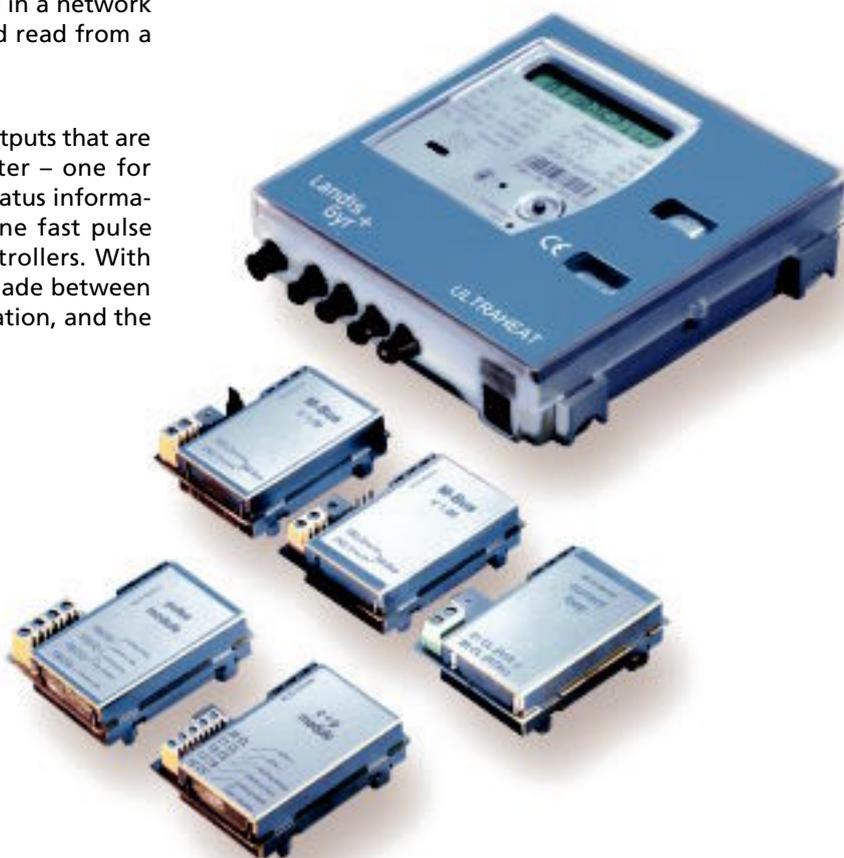
This module is used if the ULTRAHEAT 2WR5 is connected to an M-bus system and simultaneously has to pass on pulses to systems or district heating controllers for limitation and control.

[Combi module for pulses and 20-mA current loop

This module is a combination of a 20-mA module and a pulse module.

[Modem module

Integrated analogue modem without separate supply, can be called and can call itself, password protection, maintenance-free.



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